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Reviewer: Durreshwar Anjum

Timestamp: [year=2010; month=6; day=11; hr=13; min=56; sec=5; ms=89; ]

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Application No: 10561236 Version No: 1.0

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Total Warnings: 0

Total Errors: 0

No. of SeqIDs Defined: 61

Actual SeqID Count: 61

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<110> Grandi, Guido  
 Finco, Oretta  
 Ratti, Giulio  
 Bonci, Alessandro

<120> IMMUNOGENIC COMPOSITIONS FOR CHLAMYDIA  
 TRACHOMATIS

<130> 002441.00183

<140> 10561236  
 <141> 2010-06-07

<150> GB 0315020.8  
 <151> 2003-06-26

<150> US 60/497,649  
 <151> 2003-08-25

<150> GB 0402236.4  
 <151> 2004-02-02

<150> US 60/576,375  
 <151> 2004-06-01

<150> PCT/US2004/020491  
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 Ala Ala Val Val Asp Glu Asp Tyr Lys Leu Val Tyr Gln Asn Ala Leu  
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 Asp His Thr Lys Glu Gln Lys Ile Val Leu Leu Gly Leu Gly Lys Ser  
 65 70 75 80  
 Glu Glu Val Ser Gly Thr Thr Val Leu Glu Ala Tyr Ala Gln Ala Thr  
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 Thr Ile Ser Gln Leu Arg Phe Ser Val Glu Glu Phe Leu Thr Asn Leu

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Val	Ser	Lys	Val	Gly	Asp	Lys	Ile	Phe	Arg	Lys	Glu	Glu	Ser	Leu	Phe				
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Glu	Gly	Val	Tyr	Leu	Thr	Arg	Asp	Leu	Val	Asn	Thr	Asn	Ala	Asp	Glu				
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Phe	Ala	Ser	Leu	Asp	Val	Lys	Ile	Leu	Asp	Arg	Lys	Ala	Ile	Leu	Lys				
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Glu	Lys	Met	Gly	Leu	Leu	Ala	Ala	Val	Ala	Lys	Gly	Ala	Ala	Val	Glu				
225	230	235												240					
Pro	Arg	Phe	Ile	Val	Leu	Asp	Tyr	Gln	Gly	Lys	Pro	Lys	Ser	Lys	Asp				
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Arg	Thr	Val	Leu	Ile	Gly	Lys	Gly	Val	Thr	Phe	Asp	Ser	Gly	Gly	Leu				
	260	265												270					
Asp	Leu	Lys	Pro	Gly	Lys	Ala	Met	Ile	Thr	Met	Lys	Glu	Asp	Met	Ala				
	275	280												285					
Gly	Ala	Ala	Thr	Val	Leu	Gly	Ile	Phe	Ser	Ala	Leu	Ala	Ser	Leu	Glu				
	290	295									300								
Leu	Pro	Ile	Asn	Val	Thr	Gly	Ile	Ile	Pro	Ala	Thr	Glu	Asn	Ala	Ile				
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Gly	Ser	Ala	Ala	Tyr	Lys	Met	Gly	Asp	Val	Tyr	Val	Gly	Met	Thr	Gly				
	325	330												335					
Leu	Ser	Val	Glu	Ile	Gly	Ser	Thr	Asp	Ala	Glu	Gly	Arg	Leu	Ile	Leu				
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Ala	Asp	Ala	Ile	Ser	Tyr	Ala	Leu	Lys	Tyr	Cys	Asn	Pro	Thr	Arg	Ile				
	355	360												365					
Ile	Asp	Phe	Ala	Thr	Leu	Thr	Gly	Ala	Met	Val	Val	Ser	Leu	Gly	Glu				
	370	375												380					
Ser	Val	Ala	Gly	Phe	Phe	Ala	Asn	Asn	Asp	Val	Leu	Ala	Arg	Asp	Leu				
385	390	395												400					
Ala	Glu	Ala	Ser	Ser	Glu	Thr	Gly	Glu	Ala	Leu	Trp	Arg	Met	Pro	Leu				
	405	410												415					
Val	Glu	Lys	Tyr	Asp	Gln	Ala	Leu	His	Ser	Asp	Ile	Ala	Asp	Met	Lys				
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Gln	Arg	Phe	Leu	Glu	Asp	Asn	Pro	Val	Ala	Trp	Ala	His	Leu	Asp	Ile				
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Ala	Gly	Thr	Ala	Tyr	His	Glu	Lys	Glu	Glu	Leu	Pro	Tyr	Pro	Lys	Tyr				
465	470	475												480					
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Leu Ser Lys

<210> 2

<211> 421

<212> PRT

<213> Chlamydia trachomatis

<400> 2

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Ala Glu Lys Lys Ser Glu Ser Thr Glu Glu Lys Gly Asp Thr Pro Leu			
85	90	95	
Glu Asp Arg Phe Thr Glu Asp Leu Ser Glu Val Ser Gly Glu Asp Phe			
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Arg Gly Leu Lys Asn Ser Phe Asp Asp Asp Ser Ser Pro Asp Glu Ile			
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Leu Asp Ala Leu Thr Ser Lys Phe Ser Asp Pro Thr Ile Lys Asp Leu			
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Ala Leu Asp Tyr Leu Ile Gln Thr Ala Pro Ser Asp Gly Lys Leu Lys			
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Ser Thr Leu Ile Gln Ala Lys His Gln Leu Met Ser Gln Asn Pro Gln			
165	170	175	
Ala Ile Val Gly Arg Asn Val Leu Leu Ala Ser Glu Thr Phe Ala			
180	185	190	
Ser Arg Ala Asn Thr Ser Pro Ser Ser Leu Arg Ser Leu Tyr Phe Gln			
195	200	205	
Val Thr Ser Ser Pro Ser Asn Cys Ala Asn Leu His Gln Met Leu Ala			
210	215	220	
Ser Tyr Leu Pro Ser Glu Lys Thr Ala Val Met Glu Phe Leu Val Asn			
225	230	235	240
Gly Met Val Ala Asp Leu Lys Ser Glu Gly Pro Ser Ile Pro Pro Ala			
245	250	255	
Lys Leu Gln Val Tyr Met Thr Glu Leu Ser Asn Leu Gln Ala Leu His			
260	265	270	
Ser Val Asn Ser Phe Phe Asp Arg Asn Ile Gly Asn Leu Glu Asn Ser			
275	280	285	
Leu Lys His Glu Gly His Ala Pro Ile Pro Ser Leu Thr Thr Gly Asn			
290	295	300	
Leu Thr Lys Thr Phe Leu Gln Leu Val Glu Asp Lys Phe Pro Ser Ser			
305	310	315	320
Ser Lys Ala Gln Lys Ala Leu Asn Glu Leu Val Gly Pro Asp Thr Gly			
325	330	335	
Pro Gln Thr Glu Val Leu Asn Leu Phe Phe Arg Ala Leu Asn Gly Cys			
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Val Ile Thr Asn Thr Leu Asp Ala Ile Asn Ala Asp Asn Glu Asp Tyr			
370	375	380	
Pro Lys Pro Gly Asp Phe Pro Arg Ser Ser Phe Ser Ser Thr Pro Pro			
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His Ala Pro Val Pro Gln Ser Glu Ile Pro Thr Ser Pro Thr Ser Thr			
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Gln Pro Pro Ser Pro			
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<213> Chlamydia trachomatis

<400> 3

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Ser	Glu	Lys	Phe	Ile	Val	Gly	Thr	Asn	Ala	Thr	Tyr	Pro	Pro	Phe	Glu
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Phe	Val	Asp	Lys	Arg	Gly	Glu	Val	Val	Gly	Phe	Asp	Ile	Asp	Leu	Ala
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Arg	Glu	Ile	Ser	Asn	Lys	Leu	Gly	Lys	Thr	Leu	Asp	Val	Arg	Glu	Phe
65					70					75				80	
Ser	Phe	Asp	Ala	Leu	Ile	Leu	Asn	Leu	Lys	Gln	His	Arg	Ile	Asp	Ala
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Val	Ile	Thr	Gly	Met	Ser	Ile	Thr	Pro	Ser	Arg	Leu	Lys	Glu	Ile	Leu
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145					150					155				160	
Glu	Val	His	Ile	Arg	Ser	Phe	Asp	Ser	Thr	Leu	Glu	Val	Leu	Met	Glu
				165					170					175	
Val	Met	His	Gly	Lys	Ser	Pro	Val	Ala	Val	Leu	Glu	Pro	Ser	Ile	Ala
			180					185					190		
Gln	Val	Val	Leu	Lys	Asp	Phe	Pro	Ala	Leu	Ser	Thr	Ala	Thr	Ile	Asp
		195					200					205			
Leu	Pro	Glu	Asp	Gln	Trp	Val	Leu	Gly	Tyr	Gly	Ile	Gly	Val	Ala	Ser
		210				215					220				
Asp	Arg	Pro	Ala	Leu	Ala	Leu	Lys	Ile	Glu	Ala	Ala	Val	Gln	Glu	Ile
225					230					235				240	
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<210> 4

<211> 660

<212> PRT

<213> Chlamydia trachomatis

<400> 4

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Ile	Ala	Ser	Ser	Glu	Gly	Thr	Arg	Thr	Thr	Pro	Ser	Ile	Val	Ala	Phe
		35					40					45			
Lys	Gly	Gly	Glu	Thr	Leu	Val	Gly	Ile	Pro	Ala	Lys	Arg	Gln	Ala	Val
		50				55						60			
Thr	Asn	Pro	Glu	Lys	Thr	Leu	Ala	Ser	Thr	Lys	Arg	Phe	Ile	Gly	Arg
65					70					75				80	
Lys	Phe	Ser	Glu	Val	Glu	Ser	Glu	Ile	Lys	Thr	Val	Pro	Tyr	Lys	Val
				85					90					95	
Ala	Pro	Asn	Ser	Lys	Gly	Asp	Ala	Val	Phe	Asp	Val	Glu	Gln	Lys	Leu

			100					105					110			
Tyr	Thr	Pro	Glu	Glu	Ile	Gly	Ala	Gln	Ile	Leu	Met	Lys	Met	Lys	Glu	
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	130					135					140					
Val	Pro	Ala	Tyr	Phe	Asn	Asp	Ser	Gln	Arg	Ala	Ser	Thr	Lys	Asp	Ala	
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Gly	Arg	Ile	Ala	Gly	Leu	Asp	Val	Lys	Arg	Ile	Ile	Pro	Glu	Pro	Thr	
			165					170					175			
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Ala	Val	Phe	Asp	Leu	Gly	Gly	Gly	Thr	Phe	Asp	Ile	Ser	Ile	Leu	Glu	
	195					200					205					
Ile	Gly	Asp	Gly	Val	Phe	Glu	Val	Leu	Ser	Thr	Asn	Gly	Asp	Thr	His	
	210					215					220					
Leu	Gly	Gly	Asp	Asp	Phe	Asp	Gly	Val	Ile	Ile	Asn	Trp	Met	Leu	Asp	
225					230					235					240	
Glu	Phe	Lys	Lys	Gln	Glu	Gly	Ile	Asp	Leu	Ser	Lys	Asp	Asn	Met	Ala	
			245					250					255			
Leu	Gln	Arg	Leu	Lys	Asp	Ala	Ala	Glu	Lys	Ala	Lys	Ile	Glu	Leu	Ser	
	260					265					270					
Gly	Val	Ser	Ser	Thr	Glu	Ile	Asn	Gln	Pro	Phe	Ile	Thr	Ile	Asp	Ala	
	275					280					285					
Asn	Gly	Pro	Lys	His	Leu	Ala	Leu	Thr	Leu	Thr	Arg	Ala	Gln	Phe	Glu	
	290					295					300					
His	Leu	Ala	Ser	Ser	Leu	Ile	Glu	Arg	Thr	Lys	Gln	Pro	Cys	Ala	Gln	
305					310					315					320	
Ala	Leu	Lys	Asp	Ala	Lys	Leu	Ser	Ala	Ser	Asp	Ile	Asp	Asp	Val	Leu	
			325					330					335			
Leu	Val	Gly	Gly	Met	Ser	Arg	Met	Pro	Ala	Val	Gln	Ala	Val	Val	Lys	
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Glu	Ile	Phe	Gly	Lys	Glu	Pro	Asn	Lys	Gly	Val	Asn	Pro	Asp	Glu	Val	
	355					360					365					
Val	Ala	Ile	Gly	Ala	Ala	Ile	Gln	Gly	Gly	Val	Leu	Gly	Gly	Glu	Val	
	370					375					380					
Lys	Asp	Val	Leu	Leu	Leu	Asp	Val	Ile	Pro	Leu	Ser	Leu	Gly	Ile	Glu	
385					390					395					400	
Thr	Leu	Gly	Gly	Val	Met	Thr	Pro	Leu	Val	Glu	Arg	Asn	Thr	Thr	Ile	
			405					410					415			
Pro	Thr	Gln	Lys	Lys	Gln	Ile	Phe	Ser	Thr	Ala	Ala	Asp	Asn	Gln	Pro	
	420					425					430					
Ala	Val	Thr	Ile	Val	Val	Leu	Gln	Gly	Glu	Arg	Pro	Met	Ala	Lys	Asp	
	435					440					445					
Asn	Lys	Glu	Ile	Gly	Arg	Phe	Asp	Leu	Thr	Asp	Ile	Pro	Pro	Ala	Pro	
	450					455					460					
Arg	Gly	His	Pro	Gln	Ile	Glu	Val	Thr	Phe	Asp	Ile	Asp	Ala	Asn	Gly	
465					470					475					480	
Ile	Leu	His	Val	Ser	Ala	Lys	Asp	Ala	Ala	Ser	Gly	Arg	Glu	Gln	Lys	
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Ile	Arg	Ile	Glu	Ala	Ser	Ser	Gly	Leu	Lys	Glu	Asp	Glu	Ile	Gln	Gln	
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Met	Ile	Arg	Asp	Ala	Glu	Leu</										

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 Asp Ala Ser Thr Thr Ala Ile Lys Ala Ala Ser Asp Glu Leu Ser Thr  
 580 585 590  
 His Met Gln Lys Ile Gly Glu Ala Met Gln Ala Gln Ser Ala Ser Ala  
 595 600 605  
 Ala Ala Ser Ser Ala Ala Asn Ala Gln Gly Gly Pro Asn Ile Asn Ser  
 610 615 620  
 Glu Asp Leu Lys Lys His Ser Phe Ser Thr Arg Pro Pro Ala Gly Gly  
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 Ser Ala Ser Ser Thr Asp Asn Ile Glu Asp Ala Asp Val Glu Ile Val  
 645 650 655  
 Asp Lys Pro Glu  
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<211> 254

<212> PRT

<213> Chlamydia trachomatis

<400> 5

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 Ala Lys Ile Gln Ala Leu Lys Thr Asp Ile Arg Arg Lys Val Glu Glu  
 35 40 45  
 Lys Glu Gln Glu Met Glu Lys Leu Lys Asp Gln Ile Lys Gly Gly Glu  
 50 55 60  
 Lys Arg Ile Gln Glu Ile Ser Asp Gln Ile Asn Lys Leu Glu Asn Gln  
 65 70 75 80  
 Gln Ala Ala Val Lys Lys Met Asp Glu Phe Asn Ala Leu Thr Gln Glu  
 85 90 95  
 Met Thr Ala Ala Asn Lys Glu Arg Arg Thr Leu Glu His Gln Leu Ser  
 100 105 110  
 Asp Leu Met Asp Lys Gln Ala Gly Ser Glu Asp Leu Leu Ile Ser Leu  
 115 120 125  
 Lys Glu Ser Leu Ser Ser Thr Glu Asn Ser Ser Ser Ala Ile Glu Glu  
 130 135 140  
 Glu Ile Arg Glu Asn Ile Arg Lys Ile Asn Glu Glu Gly Arg Ser Leu  
 145 150 155 160  
 Leu Ser Gln Arg Thr Gln Leu Lys Glu Thr Thr Asp Pro Glu Leu Phe  
 165 170 175  
 Ser Ile Tyr Glu Arg Leu Leu Asn Asn Lys Lys Asp Arg Val Val Val  
 180 185 190  
 Pro Ile Glu Asn Arg Val Cys Ser Gly Cys His Ile Ala Leu Thr Pro  
 195 200 205  
 Gln His Glu Asn Leu Val Arg Lys Gln Asp His Leu Val Phe Cys Glu  
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